In regard to Claim 3, the use of "and" is acceptable as used. The word "or" is not acceptable in claims. As used, "a multidimensional bar code printed in at least one of a fluorescent ink and non-visible ink", is acceptable claim language since the bar code is printed in an ink selected from the group including fluorescent and non-visible inks. The claim states "in at least one". Then the one is selected from the group including "fluorescent ink and non-visible ink".

Objections Under 35 U.S.C. 112

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Comments of the Examiner

The Claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant claims the differences between a standard bar code reader and one that can read multi-dimensional fluorescent barcodes. Since examiner has interpreted that applicant regards a significant part of his invention as the capability of modifying the design of a "standard barcode reader" to a multi-dimensional fluorescent barcode reader. Applicant does not sufficiently describe all the changes from "standard" which must be made, in the specification. A "standard bar code reader" would not work as a multi-dimensional fluorescent barcode reader if only a different lens and a filter were attached.

Reply to the Examiner's Comments

Claim 9 has been amended. The comments of the Examiner do not appear to relate to the subject matter of Claim 9. Claim 9 relates to the encoding of a name on the document. The examiner above, comments on multi-dimensional and standard bar codes which are not reference in Claim 9.

Rejections Under 35 U.S.C. 103

Claims 1-8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hayosh et al in view of Cyr et al. US 5,959,296 in further view of US 6212,504 Ramzy US 6,073,121.

Comments of the Examiner

Re Claim 1 Hayosh discloses, a method of verification and fraud detection of documents, comprising: encoding data on *2* document using a encrypted multidimensional bar code. (See figure 1 and column 8 lines 35-50.) Note the 2-D barcode on the front of the cheek and the document is encrypted with keys.

Presenting the document to a reader unit and decoding the encrypted multidimensional bar code data. (See abstract.) Note the data is readout i.e. decoded by a document reader.

Hayosh does not disclose and displaying the encrypted data. However Ramzy discloses these elements in element 54 of figure 1. One of ordinary skill in the art would be motivated to provide such a display to allow for "teller review" also disclosed in element 54 of figure 2. Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Ramzy with Hayosh to achieve the aforementioned advantage.

Hayosh also does not disclose the bar code printed in fluorescent ink. However Cyr discloses putting a bar code multi-dimensional barcode in fluorescent Ink. (See column 8 lines 55-65.) Note the bar code is disclosed as potentially two-dimensional and the ink is fluorescent. One would be motivated to change the bar code to a invisible fluorescent ink for "security" and it "can be applied anywhere on the surface of a document or other article without masking or obscuring in any way the underlying background." (See column 1 lines 23-28.) Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Rammzy, Hayosh and Cry to achieve the aforementioned advantages.

Please note that structure cited in Claim I "a decoder including a correction lens and filter" is structure not material to the method and therefore is not limiting on the Claim. The elements of the decoder do not effect the method. However the filter is disclosed in Cry, (see column 8 lines 55-65) and the lens of this camera system (see column 14 line 25) must be corrective in some way, as it must focus the light.

Reply to the Examiner's Comments

Review of Cyr Patent

Here are the key elements of the Cyr patent:

Security marking using invisible barcodes. These invisible barcodes are created using chemicals which fluoresce in the near infrared (NIR) spectrum (typically 700-900 run).

Various chemical methods may be used for enhancing the decodability of an invisible fluorescing mark:

Printing a "background" to improve the contrast of the mark relative to the background (apply a non-fluorescing chemical in the background);

Using two fluorescent chemicals with different spectral characteristics (one for the mark, one for the background);

Various electronic methods for enhancing the decodability of the invisible, fluorescing mark;

Optimization of the source power level using feedback loops;

Background uniformity correction using feedback loops; and

Light source modulation (variable duty-cycle) to optimize sensitivity

Various optical methods for enhancing the decodability of the invisible, fluorescing mark may include:

Polarization -- I think this might be a good idea, but his argument wasn't really clear; and

Multiple light sources converged and scanned by a common scan mirror.

The embodiments described by Cyr were primarily laser illuminated with discrete detectors/sensors. Some mention was made of NIR LED illumination. The claims and most of the invention description are related to one-dimensional barcodes that are laser-scanned. A short statement was made about the use of two "cameras" for viewing two dimensional barcodes. The term "camera" here is ambiguous -- the patent never describes using a CCD or CMOS array. The implication was that there were two different inks/chemicals being used. It is not known why two inks would be needed.

Summary of the Present Invention (Berg)

The Berg patent application describes the use of a modified Symbol scan engine (or the like) and ultraviolet (Page 10, line 21)dyes/ink/chemicals as the fluorescing mark. The Symbol scan engine consists of a two-dimensional array of electronic detectors. A scan engine is described to scan a image two-dimensional barcodes. The big differences between the present invention (Berg) and the invention described by Cyr in patent number 5,959,296 are:

using ultraviolet (UV) light and UV activated fluorescing dyes versus the use of near infrared (NIR) (in Cyr) activated fluorophores using a modified commercially available scan engine that uses a two-dimensional array of detectors versus Cyr's use of scanned laser or LED sources;

imaging two-dimensional barcodes versus Cyr's concentration on scanning one-dimensional barcodes; and

encrypting the data -- Cyr makes no mention of this.

Comments of the Examiner

Re Claim 2 Cry further discloses, wherein the encoded data is encoded with a non-visible ink. (See column I line 24.) Note the mark (i.e. bar code) is invisible.

Reply to the Examiner's Comments

Claim 2 has been amended to define ultra violet activated ink.

Comments of the Examiner

Re Claim 3 Cyr further discloses, wherein the name of the recipient is encoded with a multidimensional bar code printed in at least one of a fluorescent ink and non-visible ink. (See column 1 line 24.) Note the mark (i.e. bar code) is invisible.

Reply to the Examiner's Comments

Claim 3 has been amended to include the ultra violet ink, which is not shown nor suggested in Cyr.

Comments of the Examiner

Re Claim 4 Ramzy further discloses, wherein the name of at least one person authorized to sign the document is encoded on one side of the document. (See column 8 lines 35-50.) Note that person authorized to sign the cheek is encoded via a combination of public and private keys.

Reply to the Examiner's Comments

Ramzy, Patent 6,073,121, does not have a Col 8, lines 35-50. Claim 4 is depended from Claim 1, which, as amended, is patentable over the cited references.

Comments of the Examiner

Re Claim 5 Hayosh further discloses, wherein the name of at least one person authorized to sign the document is encoded with a multidimensional bar code (see column 8 lines 35-50 and column II lines 57-64) and Cry further discloses the bar code printed in at least one of a fluorescent ink and non-visible ink. (See column I line 24.) Note the mark (i.e. bar code) is invisible.

Reply to the Examiner's Comments

Claim 5 specifies that "name of at least one person authorized to sign the document is encoded with a multidimensional bar code printed in at least one of an ultraviolet activated fluorescent ink and non-visible ink.", Hyosh does not show or suggest an ultraviolet activated fluorescent ink. Also, Claim 5 depends from Claim 4, which depends from Claim 1, and therefore is patentable over Hayosh.

Comments of the Examiner

Re Claim 6 Hayosh discloses, a method of verification and fraud detection of documents, comprising: encoding a document using a encrypted multidimensional bar code. (See figure I and column 8 lines 35-50.) Note the 2-D barcode on the front of the cheek and the document is encrypted with keys. The encoding including the name of the document recipient. (See column 11 lines 45-47.) Note that payee name is encoded. Encoding the document with the name of a person authorized to sign the document. (See column 8 lines 35-50.) Note that person authorized to sign the cheek is encoded via a combination of public and private keys. Presenting the document to a reader/decoder, for reading and decoding the encrypted multidimensional bar code data. (See abstract.) Note the data is readout i.e. decoded by a document reader.

Hayosh does not disclose determining the encoded name of the recipient and person authorized to sign the document and displaying the encoded names. However Ramzy discloses displaying the data in element 54 of figure 2. Ramzy also discloses the data including name of the payee (name of recipient) and signature of the payer (name of person authorized to sign the document) in a bar code. (See column 3 lines 15-30.) So this data would be displayed and must be determined before it can be displayed. One of ordinary skill in the art would be motivated to provide such a display to allow for "teller review" also disclosed in element 54 of figure 2. Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Ramzy with Hayosh to achieve the aforementioned advantage.

Hayosh also does not disclose the bar code printed in fluorescent ink. However Cyr discloses putting a bar code multi-dimensional barcode in fluorescent Ink. (See column 8 lines 55-65.) Note the bar code is disclosed as potentially two dimensional and the ink is fluorescent. One would be motivated to change the bar code to a invisible fluorescent ink for "security" and it "can be applied anywhere on the surface of a document or other article without masking or obscuring in any way the underlying background." (See column I lines 23-28.) Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Rammzy, Hayosh and Cry to achieve the aforementioned advantages.

Please note that structure cited in Claim 6, "a decoder including a correction lens and filter" is structure not material to the method and therefore is not limiting on the Claim. The elements of the decoder do not effect the method. However the filter is disclosed in Cry, (see column 8 lines 55-65) and the lens of this camera system (see column 14 line 25) must be corrective in some way, as it must focus the light.

Reply to the Examiner's Comments

Claim 6, as amended, defines "encoding a document using an ultraviolet activated fluorescent encrypted multidimensional bar code", which is not shown not suggested by any of the cited references. Also, Claim 6 has been amended to remove the reference to a corrective lens.

Comments of the Examiner

Re Claim 7, see rejection for Claim 2. Although claim 2 has a different dependency the additional limitation recited is the same.

Reply to the Examiner's Comments

Claim 7, as well as Claim 2, now define" wherein the encoded names are encoded with a ultraviolet activated non-visible ink.". which is not shown nor suggested by any of the cited references.

Comments of the Examiner

Re Claim 8, Hayosh discloses wherein the name of at least one person authorized to sign the document is encoded on at least one side of the document. (See rejection for Claim 6). Note that if it is included in the bar code it must be on at least one side of the document.

Reply to the Examiner's Comments

Claim 8 depends from Claim 7, which has been shown above to be patentable over the cited references.

Rejection of Claims 9-12 under 35 U.S.C. 103(a)

Claims 9-12 have rejected under 35 U.S.C. 103(a) as being unpatentable over Cyr et al. in view of Ramzy.

Comments of the Examiner

Re Claim 9, Cyr discloses, a system for verification of an encoded document, comprising: a reader/decoder, including a correction lens and filter, for reading encoding on a document. The filter is disclosed in Cry, (see column 8 lines 55-65) and the lens of this camera system (see column 14 line 25) must be corrective in some way, as it must focus the light. The encoding is a fluorescent encrypted multidimensional bar code. (See column 8 lines 55-65.) Note the bar code is disclosed as potentially two dimensional and the ink is fluorescent.

Cyr does not disclose a terminal for receiving data read from a document; and a display for displaying the decoded data from the document to verify data on the document with data encoded on the document. However Ramzy discloses these elements in element 9 (terminal) and element 1 (display) of figure 1. One of ordinary skill in the art would be motivated to provide such a display to allow for "teller review" also disclosed in element 54 of figure 1. Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Pamzy and Cyr to achieve the aforementioned advantage.

Comments of the Examiner

Re Claim 10, Cyr further discloses, wherein the encoded data is encoded with a non-visible ink. (See column I line 24.) Note the mark (i.e. bar code) is invisible.

Comments of the Examiner

Re Claim 11, Note since this Claim tries to recite a method step instead of structure it is not limiting in an apparatus Claim. Therefore the rejection of Claim 9 stands. However it would not be patentable anyways since Cyr further discloses, wherein the fluorescent multidimensional bar code data is read with a standard barcode reader modified with the correction lens and filter reader. (See column 8 lines 55-65 for lens and see column 14 line 25.) Note that this new reader must also be modified from "standard" with an appropriate lens for reading a 2-dimensional bar code. Furthermore, the filter must also be a modification from "standard" since it is designed to limit the light passing through to the reflections off of invisible fluorescent ink.

Ramzy then discloses the barcode decoded in the terminal and displayed to compare with data on the document. (See element 9 (terminal) and element I (display) of figure 1.)

Comments of the Examiner

Re Claim 12, Cyr further discloses, wherein the reader reads/decodes the multidimensional property bar code. (See column 8 lines 55-65.) Note the bar code being read is disclosed as potentially two-dimensional.

Reply to the Examiner's Comments

The comments of the Examiner in relation to Claims 9-12 are basically the same as those in the rejection of Claims 1-11. The claims have been amended so that the comments in relation to the allowability of Claim 1-11 apply here. None of the cited references address or suggest the invention in the amended claims.

Summary

Since it has been shown that the claims as amended are patentable over the cited references, it is respectfully requested that Claims 1-13 be allowed, and the application passed to issue.

Respectfully submitted,

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